Amendment under 37 C.F.R. § 1.111

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraphs beginning at the top of page 4 and ending with the third full paragraph on page 15 of the specification with the following amended paragraphs:

1. An In a first aspect, the invention provides an ink for inkjet (first aspect) comprising an aqueous medium, at least one of dyes represented by the following formulae (1) to (4) dissolved or dispersed in the aqueous medium, and at least one of alkylene diols where one alkylene group has at least 3 carbon atoms or their homologues dissolved or dispersed in the aqueous medium:

$$(A_{11}-N=N-B_{11})_{n}-L (1)$$

wherein A_{11} and B_{11} each independently represent an optionally-substituted heterocyclic group; n is an integer selected from 1 and 2; L represents a substituent bonding to A_{11} or B_{11} at any desired position; when n is 1, L represents a hydrogen atom or a monovalent substituent; and when n is 2, L represents a single bond or a divalent linking group;

Amendment under 37 C.F.R. § 1.111

$$(X_{24}) a_{24}$$

$$(Y_{23}) b_{23} \qquad N \qquad N \qquad (Y_{21}) b_{21}$$

$$(X_{23}) a_{23} \qquad N - M - N \qquad (X_{21}) a_{21}$$

$$(Y_{22}) b_{22} \qquad (X_{22}) a_{22}$$

$$(X_{22}) a_{22}$$

wherein X₂₁, X₂₂, X₂₃, and X₂₄ each independently represent –SO–Z₂, –SO₂–Z₂, SO₂NR₂₁R₂₂, a sulfo group, –CONR₂₁R₂₂, or –CO₂R₂₁; Z₂ independently represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group; R₂₁ and R₂₂ each independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group;

 Y_{21} , Y_{22} , Y_{23} , and Y_{24} each independently represent a monovalent substituent; a_{21} to a_{24} , and b_{21} to b_{24} indicate the number of the substituents of X_{21} to X_{24} and Y_{21} to Y_{24} , respectively; a_{21} to a_{24} each independently represent a number of from 0 to 4, but all of

Amendment under 37 C.F.R. § 1.111

Q80750

these are not 0 at the same time; b_{21} to b_{24} each independently represent a number of from 0 to 4; and when a_{21} to a_{24} , and b_{21} to b_{24} are a number of 2 or more, then plural X_{21} 's to X_{24} 's and Y_{21} 's to Y_{24} 's may be the same or different;

M represents a hydrogen atom, a metal atom or its oxide, hydroxide or halide;

$$A_{31} - N = N - N - N - N - N - N - R_{35}$$

$$R_{36}$$

$$R_{36}$$
(3)

wherein A₃₁ represents a 5-membered hetero ring; B₃₁ and B₃₂ each represent =CR₃₁- or -CR₃₂=, or either one of them is a nitrogen atom and the other is =CR₃₁- or -CR₃₂=; R₃₅ and R₃₆ each independently represent a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a carbamoyl group, an alkyl or arylsulfonyl group, or a sulfamoyl group, and each group may be substituted; G₃, R₃₁ and R₃₂ each independently represent a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a heterocyclic-oxycarbonyl group, an acyl group, a hydroxyl group, an alkoxy group, an aryloxy group, a carbamoyloxy group, an alkoxycarbonyloxy group, an aryloxycarbonyloxy group, an acylamino group, an aryloxycarbonyloxy group, an aryloxycarbonyloxy group, an acylamino group, an aryloxycarbonylamino group, an aryloxycarbonylamino group, an aryloxycarbonylamino group, an alkyl or arylsulfonylamino group, a heterocyclic

Q80750

U.S. Appln. No.: 10/811,395

Amendment under 37 C.F.R. § 1.111

sulfonylamino group, a nitro group, an alkyl or arylthio group, an alkyl or arylsul fonyl group, a heterocyclic sulfonyl group, an alkyl or arylsulfinyl group, a heterocyclic sulfinyl group, a sulfo group, or a heterocyclic-thio group, and each group may be substituted; R_{31} and R_{35} , or R_{35} and R_{36} may bond to each other to form a 5- or 6-membered ring;

$$A_{41}-N=N-A_{42}-N=N-A_{43}$$
 (4)

wherein A_{41} , A_{42} and A_{43} each independently represent an optionally-substituted aromatic or heterocyclic group; A_{41} and A_{43} are monovalent group, and A_{42} is a divalent group.

2. An The first aspect of the invention includes an ink set for inkjet comprising at least one ink-of claim 1, as described above.

3. An In a second aspect, the invention provides an ink for inkjet (second aspect)
comprising an aqueous medium, at least one of dyes represented by the following formulae (1) to
(4) dissolved or dispersed in the aqueous medium, and at least one polymer compound dissolved or dispersed in the aqueous medium:

$$(A_{11}-N=N-B_{11})_n-L$$
 (1)

wherein A_{11} and B_{11} each independently represent an optionally-substituted heterocyclic group; n is an integer selected from 1 and 2; L represents a substituent bonding to A_{11} or B_{11} at any

Amendment under 37 C.F.R. § 1.111

desired position; when n is 1, L represents a hydrogen atom or a monovalent substituent; and when n is 2, L represents a single bond or a divalent linking group;

$$(X_{24}) a_{24}$$

$$(Y_{23}) b_{23}$$

$$(X_{24}) a_{24}$$

$$(Y_{21}) b_{21}$$

$$(X_{23}) a_{23}$$

$$(X_{24}) a_{24}$$

$$(Y_{21}) b_{21}$$

$$(X_{21}) a_{21}$$

$$(Y_{22}) b_{22}$$

$$(X_{22}) a_{22}$$

wherein X₂₁, X₂₂, X₂₃, and X₂₄ each independently represent –SO–Z₂, –SO₂–Z₂, SO₂NR₂₁R₂₂, a sulfo group, –CONR₂₁R₂₂, or –CO₂R₂₁; Z₂ independently represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group; R₂₁ and R₂₂ each independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group;

Y₂₁, Y₂₂, Y₂₃, and Y₂₄ each independently represent a monovalent substituent;

U.S. Appln. No.: 10/811,395 Amendment under 37 C.F.R. § 1.111

 a_{21} to a_{24} , and b_{21} to b_{24} indicate the number of the substituents of X_{21} to X_{24} and Y_{21} to Y_{24} , respectively; a_{21} to a_{24} each independently represent a number of from 0 to 4, but all of these are not 0 at the same time; b_{21} to b_{24} each independently represent a number of from 0 to 4; and when a_{21} to a_{24} , and a_{24} are a number of 2 or more, then plural a_{21} is to a_{24} and a_{24} is may be the same or different;

M represents a hydrogen atom, a metal atom or its oxide, hydroxide or halide;

$$A_{31} - N = N - N - N - N - N - N - N - R_{36}$$

$$R_{36}$$
(3)

wherein A₃₁ represents a 5-membered hetero ring; B₃₁ and B₃₂ each represent =CR₃₁- or -CR₃₂=, or either one of them is a nitrogen atom and the other is =CR₃₁- or -CR₃₂=; R₃₅ and R₃₆ each independently represent a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a carbamoyl group, an alkyl or arylsulfonyl group, or a sulfamoyl group, and each group may be substituted; G₃, R₃₁ and R₃₂ each independently represent a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a heterocyclic-oxycarbonyl group, an acyl group, a hydroxyl group, an alkoxy group, an aryloxy group, a carbamoyloxy group, an alkoxycarbonyloxy group, an acyloxy group, an acylamino group,

Amendment under 37 C.F.R. § 1.111

an ureido group, a sulfamoylamino group, an alkoxycarbonylamino group, an aryloxycarbonylamino group, an alkyl or arylsulfonylamino group, a heterocyclic sulfonylamino group, a nitro group, an alkyl or arylthio group, an alkyl or arylsul fonyl group, a heterocyclic sulfonyl group, an alkyl or arylsulfinyl group, a heterocyclic sulfinyl group, a sulfamoyl group, a sulfo group, or a heterocyclic-thio group, and each group may be substituted; R₃₁ and R₃₅, or R₃₅ and R₃₆ may bond to each other to form a 5- or 6-membered ring;

$$A_{41}-N=N-A_{42}-N=N-A_{43}$$
 (4)

wherein A_{41} , A_{42} and A_{43} each independently represent an optionally-substituted aromatic or heterocyclic group; A_{41} and A_{43} are monovalent group, and A_{42} is a divalent group.

4. The This second aspect of the invention includes the ink for inkjet as claimed in claim 3 described above, wherein the at least one polymer compound is a latex dispersion.

5. The Further, this second aspect of the invention includes the ink for inkjet as elaimed in claim 3 described above, wherein the at least one polymer compound is a water-soluble polymer.

6. The Further, this second aspect of the invention includes the ink for inkjet as claimed in claim 3 described above, wherein the at least one polymer compound has a cationic group.

Amendment under 37 C.F.R. § 1.111

7. An Still further, the invention includes an ink set for inkjet comprising at least one ink of any of claims 3 to 6 as described in the preceding paragraphs relative to the first and second aspects of the invention.

8. An In a third aspect, the invention provides an ink set for inkjet (third aspect) comprising at least a first ink and a second ink, wherein

the first ink contains an aqueous medium and at least one of dyes represented by the following formulae (1) to (4) dissolved or dispersed in the aqueous medium, and

the second ink contains at least one compound capable of interacting with the at least one of dyes represented by the following formulae (1) to (4) dissolved or dispersed in the aqueous medium:

$$(A_{11}-N=N-B_{11})_{n}-L (1)$$

wherein A_{11} and B_{11} each independently represent an optionally-substituted heterocyclic group; n is an integer selected from 1 and 2; L represents a substituent bonding to A_{11} or B_{11} at any desired position; when n is 1, L represents a hydrogen atom or a monovalent substituent; and when n is 2, L represents a single bond or a divalent linking group;

Q80750

U.S. Appln. No.: 10/811,395 Amendment under 37 C.F.R. § 1.111

wherein X₂₁, X₂₂, X₂₃, and X₂₄ each independently represent –SO–Z₂, –SO₂–Z₂, SO₂NR₂₁R₂₂, a sulfo group, –CONR₂₁R₂₂, or –CO₂R₂₁; Z₂ independently represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group; R₂₁ and R₂₂ each independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group;

 Y_{21} , Y_{22} , Y_{23} , and Y_{24} each independently represent a monovalent substituent; a_{21} to a_{24} , and b_{21} to b_{24} indicate the number of the substituents of X_{21} to X_{24} and Y_{21} to Y_{24} , respectively; a_{21} to a_{24} each independently represent a number of from 0 to 4, but all of

Q80750

U.S. Appln. No.: 10/811,395

Amendment under 37 C.F.R. § 1.111

these are not 0 at the same time; b_{21} to b_{24} each independently represent a number of from 0 to 4; and when a_{21} to a_{24} , and b_{21} to b_{24} are a number of 2 or more, then plural X_{21} 's to X_{24} 's and Y_{21} 's to Y_{24} 's may be the same or different;

M represents a hydrogen atom, a metal atom or its oxide, hydroxide or halide;

$$A_{31} - N = N - N - N - N - N - N - N - R_{35}$$

$$R_{36}$$
(3)

wherein A₃₁ represents a 5-membered hetero ring; B₃₁ and B₃₂ each represent =CR₃₁- or -CR₃₂=, or either one of them is a nitrogen atom and the other is =CR₃₁- or -CR₃₂=; R₃₅ and R₃₆ each independently represent a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a carbamoyl group, an alkyl or arylsulfonyl group, or a sulfamoyl group, and each group may be substituted; G₃, R₃₁ and R₃₂ each independently represent a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a heterocyclic-oxycarbonyl group, an acyl group, a hydroxyl group, an alkoxy group, an aryloxy group, a carbamoyloxy group, an alkoxycarbonyloxy group, an aryloxycarbonyloxy group, an acylamino group, an aryloxycarbonyloxy group, an acylamino group, an aryloxycarbonylamino group, an alkoxycarbonylamino group, an aryloxycarbonylamino group, an aryloxycarbonylamino group, an alkyl or arylsulfonylamino group, a heterocyclic

Amendment under 37 C.F.R. § 1.111

sulfonylamino group, a nitro group, an alkyl or arylthio group, an alkyl or arylsul fonyl group, a heterocyclic sulfonyl group, an alkyl or arylsulfinyl group, a heterocyclic sulfinyl group, a sulfamoyl group, a sulfo group, or a heterocyclic-thio group, and each group may be substituted; R₃₁ and R₃₅, or R₃₅ and R₃₆ may bond to each other to form a 5- or 6-membered ring;

$$A_{41}-N=N-A_{42}-N=N-A_{43}$$
 (4)

wherein A_{41} , A_{42} and A_{43} each independently represent an optionally-substituted aromatic or heterocyclic group; A_{41} and A_{43} are monovalent group, and A_{42} is a divalent group.

9. The This third aspect of the invention includes an ink set for inkjet as claimed in elaim 8 described above, wherein the compound capable of interacting with the dye is a polyvalent metal salt.

10. The Further, this third aspect of the invention includes an ink set for inkjet as claimed in claim 8 described above, wherein the compound capable of interacting with the dye is a polycationic compound.

11. An Still further, the third aspect of the invention includes an inkjet recording method with an ink set of any of claims 8 to 10 as described in the preceding paragraphs comprising a step of forming an image with the first ink and a step of applying the second ink onto the image.